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and placed for half an hour in one per cent solution of gold and cadmium, being kept dark; washed again in one per cent aqueous solution of formic acid, in which they were left twelve hours in the dark, then twelve in the light; finally kept in the dark in stronger formic acid for one day and preserved in glycerine. The fibers of such strips may easily be dissociated.

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SCIENTIFIC NEWS.

— A review in the *Nation* of Bentham and Hooker's *Genera of Plants*, says:

"Some idea of the progressive enlargement of the field may be had by a comparison of the number of genera characterized in these successive works. The phænogamous genera of

Linnaeus,	Gen. Pl. ed. 1, A. D. 1737, were.....	887
"	ed. 6, A. D. 1764, "	1189
Jussieu,	" A. D. 1789, "	1707
Endlicher,	" A. D. 1843, " about.....	6400
Bentham and Hooker,	" A. D. 1883, "	7585

"If the last had been elaborated upon the scale of Endlicher, or with the idea of genera which is still common if not prevalent, the number of genera would have amounted to at least ten thousand. An estimate of the number of known species of each genus and higher group has been made throughout the work—a rough approximation only, mentioning first the number in the books, and the number to which, in the opinion of the authors, these may probably be reduced by botanists who adhere to the Linnæan view of species; from which it appears that upon the very strictest estimate their number, as now known to botanists, is at least 95,620. In round numbers it may fairly be said that about 100,000 species of phænogamous plants are in the hands of botanists. The five largest orders, as well for genera as for species, are the following, and in this rank: Compositæ, Leguminosæ, Orchideæ, Rubiaceæ, Gramineæ. The high standing of the orchid family in the list, will be a surprise to many. Linnaeus knew only a hundred species; five thousand is now a moderate estimate—about half as many as there are of Compositæ, which hold to their proportion of one-tenth of the whole. In both families every country and district is largely peculiar in its species and types. The far greater prominence of Compositæ over orchids is owing to the vast number of individuals in the former, their paucity in the latter."

— The British Association for the Advancement of Science elected Lord Rauleigh president of the association for 1884. Among the vice-presidents elected are the Marquis of Lorne, the Marquis of Lansdowne, Sir John A. Macdonald, Sir Charles Tupper, Sir Alexander Galt, the Right Hon. Lyon Playfair, Dr. Charles William Siemens and Professor Huxley. The date of the

next meeting, which will be held at Montreal, has been fixed for the 27th of August, 1884. The programme will include a free excursion to the Rocky mountains and trips to Quebec and Philadelphia. The association has decided to invite the American Association for the Advancement of Science to become honorary members of the association during its visit to Montreal in 1884.

— The *Répertoire de Pharmacie* quotes, upon the authority of Dr. Nessler, a recipe for an insecticide which is said to have a great reputation among German horticulturists. It consists of soft-soap, 4 parts; extract of tobacco, 6 parts; amylic alcohol, 5 parts; methylic alcohol 20 parts; water to make 1000 parts. The extract of tobacco is made by boiling together equal parts of roll tobacco and water for half an hour, adding water to make up for what is evaporated. The soft-soap is first dissolved in the water with the aid of a gentle heat, and the other ingredients are then added. The mixture requires to be well stirred before it is used, and is applied by means of a brush or a garden syringe fitted with a small hose.—*English Mechanic*.

— A number of gentlemen met at the American Museum of Natural History in New York, Sept. 26, and established the American Ornithologists' Union. Those present were: Dr. Elliott Coues in the chair; Mr. E. P. Bicknell, secretary *pro tem.*; Messrs. C. Aldrich, Iowa; C. F. Batchelder, Mass.; Capt. Chas. Bendire, Oregon; N. C. Brown, Me.; Wm. Brewster, Mass.; M. Chamberlain, New Brunswick; C. B. Cory, Mass.; D. G. Elliott, N. Y.; Dr. A. K. Fisher, N. Y., Dr. J. B. Holder, N. Y.; T. McIlwraith; Dr. C. Hart Merriam, N. Y.; Dr. E. A. Mearns, N. Y.; Dr. D. W. Prentiss, Washington; Robert Ridgway, Washington; Dr. R. W. Shufeldt, La.

— A despatch from the commander of the French deep-sea expedition in the *Talisman*—Professor A. Milne-Edwards—has been received, in which he states that the expedition had so far met with complete success. The *Talisman* proceeded some distance down the coast of Africa, and then turned to St. Vincent, Cape Verde islands, sounding all the way. The vessel, at the date of the despatch, was about to proceed with the last section of her voyage—the investigation of the Sargasso sea.—*English Mechanic*.

— Under the title of Signal Service Notes, five pamphlets relating to the work of the bureau, have been issued. The fifth is on the work of the Signal Service in the Arctic regions, and contains the reports of W. M. Beebe of the Relief Expedition to Lady Franklin bay, Grinnell Land; of Lt. J. S. Powell of the Relief Expedition to Point Barrow, Alaska, and of P. H. Ray on his work at Point Barrow, from Sept. 16, 1881, to Aug. 25, 1882. Lt. Powell's report contains interesting ethnological notes.

— The muscular nerves of the torpedo or electric eel are, ac-

cording to M. Stassano, more quickly paralyzed than those controlling its electric battery. He has made experiments with curare, bergamot, sulphuric ether, strychnine and digitaline, and obtained the same general result with all.

— The French Association met at Rouen from August 16 to 25. A number of excursions were arranged, notably to Elbeuf, Dieppe, Havre and Cherbourg.

— The sudden death of Dr. Herman Müller by an attack of lung fever, at Prad, in Tyrol, Aug. 25, will be a shock to those who have been interested in his notable articles and works. Dr. Müller was an upper teacher in the real gymnasium of Lippstadt. He was a brother of the distinguished Fritz Müller, of Desterro, Southern Brazil. Herman Müller had, by his numerous articles, many of which were published in *Kosmos*, and his works, made himself the leading authority on the subject of the mutual relations of insects and flowers in promoting cross-fertilization. His two great works were "Die Befruchtung der Blumen durch Insekten," published in 1873, and "Alpenblumen, ihre Befruchtung durch Insekten," 1881. The previous work has just been translated into English by Mr. D'Arcy-Thompson, and is just published.

Dr. Müller was a gifted observer, and, like the brother who survives him, a scientist of marked individuality.

— The death is announced of Dr. Filippo Pacini, professor of anatomy at the University of Florence, and well known beyond the Alps for many valuable contributions to scientific medicine, especially in his studies on the nature of Asiatic cholera, and his system of artificial respiration.

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PROCEEDINGS OF SCIENTIFIC SOCIETIES.

BOSTON SOCIETY OF NATURAL HISTORY, Oct. 3.—Mr. Fred. W. Putnam gave an account of the "Great Serpent Mound" in Adams county, Ohio, and of some other ancient works in Wisconsin and Ohio, examined during the past summer.

NEW YORK ACADEMY OF SCIENCES, Oct. 1.—A paper was read (by title and abstract) on The Patio and Cazo processes for the amalgamation of silver ores, used in Mexico and Chili, by Professor Thomas Egleston.

SITZUNGSBERICHT DER GESELLSCHAFT NATURFORSCHENDER FREUNDE ZU BERLIN. 1882.—March 21.—Herr Nehring spoke of the so-called "wolf's teeth" of the horse, in relation to the genealogical development of the genus *Equus*. In front of the upper row of molars a small tooth is often to be seen, but is lost with the increase in size of the teeth. To be consistent, this tooth must be included in the dental formula, which will thus contain four premolars instead of three. A corresponding tooth is oc-